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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,242	06/16/2005	Shahram Mihan	8019.102	9253
34872	7590	07/03/2007	EXAMINER	
BASELL USA INC. INTELLECTUAL PROPERTY 912 APPLETON ROAD ELKTON, MD 21921			LU, C CAIXIA	
			ART UNIT	PAPER NUMBER
			1713	
			MAIL DATE	DELIVERY MODE
			07/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/539,242

Applicant(s)

MIHAN ET AL.

Examiner

Caixia Lu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/16/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of Group I, claims 1-11 with species of (20(1-indenylmethyl)-1-methyl-imidazole)chromium dichloride, in the reply filed on June 8, 2007 is acknowledged. The traversal is on the ground(s) that little additional search effort is required to perform a search for all Groups. This is not found persuasive because the ligand compound and the metal complex catalyst belong to different classes and the search is not coextensive.

The requirement is still deemed proper and is therefore made FINAL.

### *Claim Objections*

2. Claims 1-11 are objected to because of the following informalities and appropriate correction is required.

#### Claim 1

(i) Bridging lines 12 and 13, the phrase "and/or R<sup>1B</sup> and R<sup>2B</sup> and A" should be replaced with --or R<sup>1B</sup>, R<sup>2B</sup> and A--.

(ii) Line 16, the term -- or -- should be inserted in the front of "alkylaryl".

(iii) Line 20, the "," after term "fused" should be deleted.

(iv) Lines 11, 13, and 18 respectively, the term "also" should be deleted.

#### Claim 2

(i) Bridging lines 12 and 13, the phrase "and/or R<sup>1B</sup> and R<sup>2B</sup> and A" should be replaced with --or R<sup>1B</sup>, R<sup>2B</sup> and A--.

(ii) Line 16, the term -- or -- should be inserted in the front of "alkylaryl".

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- (iii) Line 20, the “,” after term “fused” should be deleted.
- (iv) Lines 11, 13, 18, 32 and 33 respectively, the term “also” should be deleted.
- (v) Line 36, the term – or -- should be inserted in the front of “alkylaryl”.

**Claim 3**

- (i) Line 3, the negative charge in the cyclopentadienyl ring is missing.
- (ii) Line 9, insert the term “or” in the front of “BR<sup>6A</sup><sub>2</sub>”.
- (iii) Lines 10 and 18, the term “also” should be deleted.
- (iv) Line 16, the term – or -- should be inserted in the front of “alkylaryl”.

Corrections similar what are shown above should also apply to the rest of the claim.

***Specification***

- 3. The disclosure is objected to because of the similar informalities in the corresponding sections as shown in the above claims. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

- 4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 5. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 6,723,675 B1).

Wang teaches a transition metal complex represented by the structure shown in col. 2 (col. 1, line 54 to col. 2, line 59) and a polymerization process thereof. When E of

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(iii) Line 20, the “,” after term “fused” should be deleted.

(iv) Lines 11, 13, 18, 32 and 33 respectively, the term “also” should be deleted.

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Claim 3

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***Specification***

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5. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 6,723,675 B1).

Wang teaches a transition metal complex represented by the structure shown in col. 2 (col. 1, line 54 to col. 2, line 59) and a polymerization process thereof. When E of

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the transition metal complex structure is represent by formula (i), and the  $R_7$  and  $R_8$  together with  $C=Z_1$  of forms a five member-ring, or E is represent by form (ii), M is Ti(III) or Cr, V, Mo or W, Wang's teaching meets the limitation of the instant claims.

Therefore, it would have been obvious to a skilled artisan at the time the invention was made to employ Wang's teaching to provide various transition metal complexes as shown above in search for a catalyst composition to provide an olefin polymer with desired molecular weight, improved activity, and stereoselectivity since such is within the generic disclosure of the reference and all of the embodiments of the reference are expected to work and in the absence of any showing of criticality and unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



Caixia Lu, Ph. D.  
Primary Examiner